Homework 5

Christophe Hunt

February 28, 2017

Contents

1 Page 228: problem 1

Consider a model for the long-term dining behavior of the students at College USA. It is found that 25% of the students who eat at the college's Grease Dining Hall return to eat there again, whereas those who eat at Sweet Dining Hall have a 93% return rate. These are the only two dining halls available on campus, and assume that all students eat at a one of these halls. Formulate a model to solve for the long-term percentage of students eating at each hall.

Table 1: Present - Next State for Dining

		NEXT STATE	
		Grease Dinning Hall	Sweet Dining Hall
PRESENT STATE	Grease Dining Hall	.25	.75
	Sweet Dining Hall	.7	.93

1.1 Model to solve for long-term percentage

$$Grease_{n+1} = .25\ Grease_n + .7\ Sweet_N$$
$$Sweet_{n+1} = .75\ Grease_n + .93\ Sweet_N$$

2 Page 232: problem 1

3 Page 240: problem 1

4 Page 240: problem 2